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**Eyring et al.**

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(54) **FLUID CONTROL ASSEMBLIES AND FLOW PATH INSERTS**

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See application file for complete search history.

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 441 days.

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(57) **ABSTRACT**

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(58) **Field of Classification Search**

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A flow path insert for a fluid control assembly includes an upstream portion and a downstream portion integral with the upstream portion. The upstream portion includes an upstream peripheral surface and the downstream portion includes a downstream peripheral surface. The upstream portion and the downstream portion cooperate to define an inlet passage and an outlet passage in fluid communication with the inlet passage. The inlet passage defines a first axis and the outlet passage defines a second axis that is transverse to the first axis. When the flow path insert is positioned within a body of a fluid control assembly, the upstream peripheral surface is in contacting engagement with the body and the downstream peripheral surface is spaced from the body. At least the downstream portion of the flow path insert and the body cooperate to define an annular passage in fluid communication with the outlet passage. Fluid control assemblies are also disclosed.

**22 Claims, 30 Drawing Sheets**

